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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
David P. Huber, et al.	)	Group Art Unit: 3679
	)	
Serial No. 10/684,318	)	
	)	Examiner: Victor L. MacArthur
Filed: October 11, 2003	)	
	)	
For: PROCESS FOR FORMING AN INTERNALLY SPLINED PART	)	Attorney Docket 1-36569

May 11, 2007

Mail Stop Appeal Brief - Patents
Commissioner for Patents
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Alexandria, VA 22313-1450

RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF AND AMENDED BRIEF ON APPEAL

Honorable Sir:

In response to the Notification of Non-Compliant Appeal Brief dated April 24, 2007, attached is an Amended Brief on Appeal from the action of the Examiner dated August 14, 2006, finally rejecting Claims 1-4, 7, 17, and 18 in the above-identified patent application. This complete, Amended Brief on Appeal is being filed under the provisions of 37 CFR §41.37.

The Commissioner is hereby authorized to charge any necessary charges, or credit overpayments, to Deposit Account No. 50-3156 for Fraser Clemens Martin & Miller LLC.

A decision on whether to request an oral hearing will be delayed until after the Examiner's Answer has been received.

Respectfully submitted,

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BRIEF ON APPEAL

This is an appeal from the action of the Examiner dated August 14, 2006, in the above-identified application.

REAL PARTY IN INTEREST

The real party in interest is Metal Forming and Coining Corporation, a corporation organized and existing under the laws of the State of Ohio, to which the inventors, David P. Huber, Ben R. Vasa, and Timothy J. Crispey have assigned all rights in the invention. The assignment was recorded with the U.S. Patent and Trademark Office on October 11, 2003, at reel 014610, frame 0519.

RELATED APPEALS AND INTERFERENCES

The are no other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on, the Board's decision in this pending Appeal.

STATUS OF CLAIMS

Claims 1-4, 7, 17, and 18 are pending in the application, and stand rejected. Claims 5 and 6 are canceled. Claims 8-16 are withdrawn. Claims 1-4, 7, 17, and 18 are being appealed.

STATUS OF AMENDMENTS

The amendment filed September 1, 2006 after issuance of the final rejection has not been entered for the purposes of this appeal. The Examiner indicated that the proposed amendment raises new issues that would require further consideration and/or search, and that the amendment is not deemed to place the application in better form for appeal. Accordingly, this amended brief on appeal does not include content related to the amendment filed September 1, 2006.

SUMMARY OF THE CLAIMED SUBJECT MATTER

Appellants' invention as set forth in independent Claim 1 is directed to an internally splined part. Internally splined part comprises the following structural components:

A) a main body of formable metal (Page 5, lines 12-16 of U.S. App. Serial No. 10/684,318; and reference number 10, FIGS. 1, 4, 5a-5c, 6a-6c, 7);

B) a longitudinal axis (Impliedly, a shaft has a longitudinal axis; reference numeral 12, FIG. 1);

C) projections (Page 7, lines 8-17 of U.S. App. Serial No. 10/684,318, as amended in the amendment filed April 20, 2006; and reference numeral 30, FIGS. 1, 4, 5a-5c, 6a-6c, 7);

D) slots (Page 7, lines 8-17 of U.S. App. Serial No. 10/684,318, as amended in the amendment filed April 20, 2006; and FIGS. 1, 4, 5a-5c, 6a-6c, 7);

E) shaft (Page 7, lines 8-17 of U.S. App. Serial No. 10/684,318, as amended in the amendment filed April 20, 2006);

F) a plurality of spaced apart splines (Page 3, lines 24-28 and page 4, lines 1-3 of U.S. App. Serial No. 10/684,318; page 6, lines 13-20; page 7, lines 8-17; and reference number 30, FIGS. 1, 4, 5a-5c, 6a-6c, 7);

G) a plurality of small raised portions (Page 3, lines 24-28 and page 4, lines 1-3 of U.S. App. Serial No. 10/684,318; page 7, lines 18-25; and reference number 34; FIGS. 5a-5c, 6a-6c, 7); and

H) a surface of a corresponding body (Page 7, lines 18-25 of U.S. App. Serial No. 10/684,318, as amended in the amendment filed September 1, 2006; and reference numeral 38, FIGS. 4, 5a-5c, 6a-6c, 7, as amended in the amended drawings filed September 1, 2006).

Claims 2-4, 7, 17, and 18 depend directly or indirectly from, and contain at least the same elements and limitations as, Claim 1. Claim 2 recites that the main body is hollow (Page 5, lines 16-18 of U.S. App. Serial No. 10/684,318; and reference numeral 12, FIG. 1). Claim 3 recites that the splines extend inwardly (Page 7, lines 8-17, as amended in the amendment filed April 20, 2006; and reference numeral 30, FIGS. 1, 4, 5a-5c, 6a-6c, 7). Claim 4 recites that the raised portions are uninterrupted (Reference numeral 34, FIGS. 4, 5a-5c, 6a-6c, 7). Claim 7 recites that the formable metal is an aluminum alloy (Page 5, lines 14-16). Claim 17 recites that the raised portions are disposed between the spaced apart splines (Reference numeral 34 and 34', FIGS. 4, 5a-5c, 6a-6c, 7). Claim 18 recites that the raised portions are disposed on the surface of the spaced apart splines (Reference numeral 34", FIG. 7

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1 – 4, 17, and 18 have been indicated as unpatentable under 35 U.S.C. §102(b), as being anticipated by Mancuso (U.S. Patent No. 6,026,700).

Claim 7 has been indicated as unpatentable under 35 U.S.C. 103(a) as being unpatentable over Mancuso (U.S. Patent 6,026,700) in view of Mangas (U.S. Patent 4,716,276).

ARGUMENT I

Whether Claims 1 – 4, 17, and 18 are unpatentable under 35 U.S.C. § 102(b), as being anticipated by Mancuso (U.S. Patent No. 6,026,700).

The Examiner has rejected Claims 1-4, 17, and 18 under 35 U.S.C. 102(b) as being anticipated by Mancuso (U.S. Patent No. 6,026,700). The Examiner stated:

> "Mancuso discloses (fig. 16) a splined component for transmitting torque comprising: a main body (100) of formable metal (cross hatching of fig. 2 denotes metal) and having a longitudinal axis; a plurality of spaced apart splines (300) of formable metal being generally parallel to the longitudinal axis of and extending from said body and being projections on said body that cooperate with slots (slots between teeth 400) on a corresponding shape enabling cooperative rotation; and a plurality of small raised portions (200) of said formable metal extending away from said main body and being generally parallel to the axis of said body and said splines raised portions, and body are integral and homogenous."

Appellants' Claim 1 recites the following structural limitation:

> ...that at least one of the raised portions are adapted to contact the surface of a corresponding body.

To support a finding of anticipation under 35 U.S.C. 102(b), the Examiner must show that each element of the claim was taught by a single prior art reference, *Scripps Clinic & Research Found. v. Genentech, Inc.*, 927 F.2d 1565 (Fed. Cir. 1991). Mancuso shows a structure including gear teeth 202 having relief depths R1 and fillets F1 to provide clearance between the interacting roots and tips of external teeth 302 and internal teeth 202 (col. 8 lines 36-38). The relief depths R1 and fillets F1 taught by Mancuso do not contact the surface of a corresponding body as recited in Appellants' Claim 1. In fact, exactly the opposite is taught by Mancuso. The relief depths R1 and fillets F1 serve to provide clearance between the external teeth 302 and the internal teeth 202. Mancuso does not show raised portions adapted to contact the surface of a corresponding body as recited in Appellants' Claim 1.

In the case of the instant application, Appellants' Claim 1 recites the above limitations not taught by Mancuso. Accordingly, a rejection based on anticipation under 35 U.S.C. 102(b) is not proper.

Further, the Courts have held that "an applicant may rebut a prima facie case of obviousness by showing that the prior art teaches away from the claimed invention in any material respect", *In re Geisler*, 116 F.3d at 1469, 43 USPQ2d at 1365 (quoting *In re Malagari*, 499 F.2d at 1303, 182 USPQ at 553). The Appellants contend that Mancuso teaches away from raised portions adapted to contact the surface of a corresponding body as recited by Claim 1. Mancuso teaches relief depths R1 and fillets F1 used provide clearance between the interacting roots and tips of the external teeth 302 and internal teeth 202. The relief depths and fillets shown by Mancuso teach away from raised portions adapted to contact the surface of a corresponding body. The purpose of the relief depths and fillets is to create clearance between surfaces, rather than to create contact between surfaces.

The limitations of Appellants' Claim 1 are not shown by the reference cited by the Examiner. Further, the reference cited by the Examiner teaches away from the limitations of Appellants' Claim 1. Therefore, it is submitted that Claim 1, contains allowable subject matter and should be patentable.

Since Claims 2-4 and 17-18 depend, either directly or indirectly, from Claim 1 and include further limitations, these Claims are submitted to be patentable.

ARGUMENT II

Whether Claim 7 is unpatentable 35 U.S.C. 103(a) as being unpatentable over Mancuso (U.S. Patent 6,026,700) in view of Mangas (U.S. Patent 4,716,276).

Claim 7 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Mancuso (U.S. Patent 6,026,700) in view of Mangas (U.S. Patent 4,716,276). The Examiner stated:

> "Mancuso does not expressly state that the formable metal is an aluminum alloy. Mangas teaches (col. 4 lines 1-12) that splined components should preferably be made of aluminum alloys for the purpose of reducing weight. Furthermore, it is well known that aluminum alloys (e.g., such as aluminum alloyed with titanium) are stronger and lighter than pure aluminum. Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify the Mancuso formable metal to be an aluminum alloy, as illustrated by Mangas, for the purpose of decreasing weight and increasing strength."

Claim 7 depends from Claim 1 and contains all of the limitations thereof. For the reasons stated above, Mancuso does not disclose small raised portions wherein at least one is adapted to contact the surface of a corresponding body as recited in Appellants' Claim 1. Mangas does not fill the void. It is submitted that Claim 7 should be allowable along with Claim 1.

It is submitted that the Examiner has not made a prima facie case of obviousness under 35 U.S.C. § 103(a). Accordingly, Appellants respectfully request that the rejection of Claim 7 under 35 U.S.C.§ 103(a) be withdrawn. It is submitted that Claim 7 includes allowable subject matter and is patentable.

CONCLUSION

It is respectfully submitted that the Examiner has failed to demonstrate the anticipation of the Claims given Mancuso, or the obviousness of the Claims given Mancuso in view of Mangas. Accordingly, Appellants respectfully request that the Board reverse the Examiner's rejection of Claims 1 – 4, 7, 17, and 18.

CLAIMS APPENDIX

1. A splined component for transmitting torque comprising:

a main body of formable metal and having a longitudinal axis;

a plurality of spaced apart splines of formable metal being generally parallel to the longitudinal axis of and extending from said body and being projections on said body that cooperate with slots on a corresponding shaft enabling cooperative rotation; and

a plurality of small raised portions of said formable metal extending away from said main body and being generally parallel to the axis of said body, at least one of said raised portions adapted to contact the surface of a corresponding body, said splines, raised portions, and body are integral and homogenous.

2. The component defined in Claim 1 wherein said main body is hollow.

3. The component defined in Claim 2 wherein said splines extend inwardly.

4. The component defined in Claim 3 wherein said raised portions are uninterrupted.

7. The component defined in Claim 1 wherein the formable metal of said body, said splines, and said raised portions is an aluminum alloy.

17. The component defined in Claim 4 wherein said raised portions are disposed between said spaced apart splines.

18. The component defined in Claim 4 wherein said raised portions are disposed on the surface of said spaced apart splines.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.